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Illusions of Parental Control: Parenting and Smoking Onset in Dutch and Swedish Adolescents[1]

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Parental control is assumed to be associated with smoking onset: Parents who exert control on their children and monitor their children's behavior are less likely to have children who start to smoke. However, the empirical evidence for this assumption is mostly from cross-sectional studies. The present research examined the prospective associations between parental control and smoking onset among Dutch and Swedish adolescents and their parents. Findings revealed nonsignificant links between general parental control and smoking onset in both samples, and no link between smoking-specific parental control and smoking onset in the Dutch sample, thereby questioning the assumption that parental control prevents adolescent smoking onset.

It is commonly assumed, and among parents is highly desirable, that parents are able to exert control on their children. This control is assumed to play a major role in determining whether or not children develop problem behavior: Parents who exert control constructively and consistently are believed to have children who have few problems. On the contrary, both parents who exert no control and parents who exert control for the sake of control are believed to have children who have a wide range of problems (Chassin, Presson, Todd, Rose, & Sherman, 1998).

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Ample studies have focused on the role of parental control in the development of adolescent delinquency, aggression, alcohol use, drug use, low academic performance, and difficult peer relations. Yet, little attention has been paid to adolescent smoking behavior (see elaborate discussion by Chassin et al., 1998). This neglect of smoking as a problem related to parental control is especially surprising in light of the detrimental health effects of smoking in the long run, the fact that cigarette smoking starts in the adolescent years (Institute of Medicine, 1994; Stivoro, 1999), and the fact that quite a number of studies have shown consistently that parental smoking is a precursor of adolescent smoking initiation (e.g., Engels, Knibbe, De Vries, Drop, & Van Breukelen, 1999; Friestad, 1998; Goddard, 1990; Petraitis, Flay, & Miller, 1995).

Thus far, only a few empirical studies have examined the link between parental control and adolescent smoking behavior. To illustrate, longitudinal studies by Chassin and colleagues (Chassin, Presson, Sherman, Montello, & McGrew, 1986; Chassin et al., 1998) showed that higher levels of *parental strictness*—that is, parental control through the implementation of firm and consistent rules—are related to lower involvement in smoking. Simons-Morton et al. (1999) stressed that high levels of parental knowledge, whereby parents exert control by keeping watch over their children's activities, were related to a lower likelihood of adolescents starting to smoke.

Kandel and Wu (1995) found moderate associations between parental control—in their case indicating the existence of general parental rules and regulations—and adolescents' lifetime smoking. In addition, in a cross-sectional study, Henriksen and Jackson (1998) found that *authoritative parenting*—which represents a parenting style in which parents exert control within a supportive, warm relationship—was negatively related to adolescent smoking behavior. In another cross-sectional study, Finkenauer, Engels, Kerkhof, and Van Dijk (2002) found that increased levels of *parental solicitation*—a form of parental control whereby parents actively seek information from their children—were related to lower intentions of adolescents to start smoking. It is important to mention that although moderate associations between different indicators of parental control and smoking are found in cross-sectional studies, the associations found in prospective studies are generally weak.

Recently, Kerr and Stattin (2000; Stattin & Kerr, 2000) argued that in many studies, parental control is neither well defined nor adequately operationalized. Often, researchers use scales that claim to assess parental monitoring (i.e., actively keeping watch and seeking information about their children's whereabouts and activities) or control (i.e., implementation of rules), but actually assess the (passively acquired) knowledge of parents about their children's activities, feelings, school performance, or social relationships. However, the fact that some parents have knowledge about their child's life does not necessarily mean that they have actively gathered this knowledge by exerting control or by

soliciting information from their child. Rather, it is equally likely that parental knowledge is not at all the result of what parents did, but of what the child did; namely, disclosing information to his or her parents, thereby increasing their knowledge about his or her activities and whereabouts. Consistent with this suggestion, in two cross-sectional studies, Kerr and Stattin (2000; Stattin & Kerr, 2000) showed that parental knowledge is strongly affected by what adolescents disclose to their parents, and hardly by what parents actively do to gather information (e.g., exerting control and soliciting information from the child).

In order to gain insight into parents' use of control and the actions they engage in to obtain control over their children's behavior, it is essential to carefully distinguish parental knowledge from parental control (the implementation of rules and regulations) and parental solicitation (parents' active behavior aimed at obtaining control). In some of the aforementioned studies on adolescent smoking behavior, parental control is actually operationalized as parental knowledge, and thus can not be interpreted as active parental actions or behavior aimed at obtaining control.

The present study aims to take a closer look at the link between parental control and smoking by examining the effects of different (newly reconceptualized) assessments of parental control on smoking onset in adolescence. Data will be used from longitudinal surveys carried out among adolescents and their parents in Sweden and in The Netherlands.

Behavioral and Psychological Control

Until now, we underlined important differences between concepts related to parents' exertion of control upon their children. That is, we focused on parental behavior and actions to obtain control and less on how they exert control (Kerr & Stattin, 2000). Asking parents whether they implement rules and norms in their relationship with their children is one thing; asking them how they do it is an entirely different story. To illustrate, whether parents exert control in a neutral and constructive manner, or with anger and coercion, may be extremely relevant in the context of examining the effect of parental control on adolescent problem behavior. Preliminary evidence corroborates this suggestion. A few studies have shown that so-called parental *psychological control*, consisting of coercive discipline and suppressing individuality, is linked to greater misbehavior among adolescents (e.g., Finkenauer, Engels, & Baumeister, 2005; Gray & Steinberg, 1999).

Thus, although parental behavioral control, consisting of monitoring one's offspring's social activities and setting limits, may be related positively to behavioral adjustment, psychological control may be related negatively to adjustment. Put more simply, parents may get good results by keeping tabs on their adolescent children and setting limits (i.e., behavioral control), but coercive and stifling

tactics (i.e., psychological control) may backfire and increase problem behaviors. This assumption is supported by the studies of Barber, Olsen, and Shagle (1994) and of Gray and Steinberg (1999) showing that exerting control without paying attention to providing emotional autonomy to their children has counterproductive effects on adolescents' problem behavior. In the case of smoking, therefore, it is important to compare the effects of behavioral control and psychological control on the development of adolescent smoking behavior.

Smoking-Specific Assessments of Parental Control

In most studies, non-outcome-behavior-specific assessments of parental control and solicitation are used (see also Darling & Steinberg, 1993). However, recent empirical studies on adolescent smoking behavior have examined the role of smoking-specific parenting in adolescent smoking behavior (Engels & Willemsen, 2004; Ennett, Bauman, Foshee, Pemberton, & Hicks, 2001; Jackson & Henriksen, 1997). Hence, it may enhance our understanding of the role of parental control in adolescent problem behavior if we were to focus on how parents actually deal with the specific problem behavior (e.g., smoking, drinking, aggression), rather than focus on whether parents exert control in general.

In a cross-sectional study, Jackson and Henriksen (1997) demonstrated that when parents enforce control on their offspring's smoking behavior (e.g., establishing nonsmoking rules, warning about smoking risks, punishment if they find out that their child smokes), the children were less likely to smoke. Furthermore, Simons-Morton et al. (1999) reported that parental monitoring (i.e., parents keeping watch) might be a strong factor in determining adolescent smoking behavior. Their findings showed that when adolescents thought their parents would not find out that they smoked, they were 4 times more likely to smoke than if they thought their parents would find out immediately. Paradoxically, in a cross-sectional study, Andrews, Hops, Ary, Tildesley, and Harris (1993) showed that strong negative reactions of parents toward adolescent smoking resulted in higher levels of adolescent smoking. Nonetheless, they also found that parents who warned their children about the effects of smoking were more likely to have children who refrained from smoking.

Although these studies suggest that the exertion of parental behavioral smoking-specific control may help adolescents to refrain from smoking, studies focusing on the impact of parental solicitation about smoking have been inconclusive. In a cross-sectional study, Jackson and Henriksen (1997) reported that when parents regularly talk about smoking, children are less likely to start smoking. However, a study by Engels and Willemsen (2004) found a positive association between parental solicitation and smoking intentions cross-sectionally, indicating that the more parents talked about smoking, the more adolescents reported an intention to start smoking. Furthermore, in a longitudinal study,

Ennett et al. (2001) found no significant relations between parental communication about smoking and adolescent smoking onset.

Thus, the findings from recent studies suggest that it is relevant to distinguish smoking-specific parental control from general parental control. However, almost all of these studies were cross-sectional, providing no information about the role of smoking-specific control in the onset of smoking. It is important to examine the prospective relations of smoking-specific indicators of parental control and solicitation with adolescent smoking behavior. In addition, it is important to compare the predictive value of general and smoking-specific parental control on adolescent smoking.

Moderating Variables

Although parental control may be related directly to adolescent smoking onset, it is also possible that other characteristics of the parents or the parent–child relationship moderate the associations between parental control and adolescent smoking. For example, parental warnings about the negative physical and social effects of smoking for their child may be related more strongly to adolescent smoking when parents do not smoke themselves. In a case where one or both parents smoke, parental warnings about the effects of smoking might be less effective. As Ennett et al. (2001) argued, children may pay less attention to their parents' warnings if the parents are smokers themselves.

Besides the role of parental smoking behavior, it is also possible that the quality of the parent–child relationship moderates associations between parental control and adolescent smoking. If adolescents have an unsatisfactory and conflictive relationship with their parents, parental control may be related less strongly to smoking than if adolescents have a warm and stimulating relationship with their parents (Foshee & Bauman, 1992). In the latter case, adolescents may be more likely to accept parental control and to adopt parental rules and regulations.

Illusions of Control

Perhaps parental controlling activities do not affect adolescent smoking onset. This might be less of a problem if parents are aware of the fact that it does not help. If parents do not think that their ways to affect their children's opinions and behaviors are really effective, their actions are indeed likely to be ineffective in preventing smoking in children.

In a cross-sectional study, we found preliminary support for the assumption that parents who thought their ways of preventing their offspring from initiating smoking are really ineffective were more likely to end up with smoking children (Engels & Willemsen, 2004). On the other hand, some parents might undertake

all kinds of activities to prevent their children from smoking and might also have faith in their undertaking, while in fact their actions hardly affect their children's behaviors. In that case, parents have an illusion of control: They think they control their children's smoking behavior when in fact they do not.

The Present Research

Data from two longitudinal studies among early and middle adolescents conducted in Sweden and The Netherlands will be used to answer our research questions. The first question is whether assessments of parental control are related to smoking onset. We will examine the role of parental control and solicitation as indicators of active parental behavior to obtain control on smoking behavior. In addition, child disclosure is included in analyses as a control variable to ensure that parental control is not merely an indicator of the child's openness toward parents.

A replication of findings of the Swedish study with data from the Dutch study will underline the robustness and theoretical relevance of the findings. The aims of the Dutch study build on the previous study by addressing four other research questions. First, Is psychological parental control related to smoking onset above and beyond the association between behavioral parental control and smoking onset? Second, Is smoking-specific parental control related to smoking onset? The third question is whether associations between general and smoking-specific parental control and smoking are moderated by parental own smoking status and the quality of the parent–child relationship. The final question is whether parents have an illusion of control.

Study 1

Method

Procedure and Sample Characteristics

Data for analyses were derived from a large-scale survey carried out in 1998-1999 (for details on the procedure, see Kerr & Stattin, 2000) and a follow-up in 2000, 18 months later. There were 1,279 potential adolescent respondents in the target population (48% boys, 52% girls). The mean age was 14.42 years. Of these 1,279 adolescents, 1,186 (92.7%) were present during the first part of the data collection; and 1,131 (88.4%) were present during the second part of the data collection in Fall 1998. In Spring 2000, 1,057 (82.6%) adolescents (M age = 16.00 years) participated in the follow-up assessment.

All data collection took place in school during school hours and was led by trained personnel from the research group. Teachers were not present in the

classrooms. In the initial information, parents were informed about the option to decline their children's participation or their own participation. Only 1% refused to let their children take part in the studies, and also declined their own participation. Adolescents' participation was voluntary, after their parents had granted consent, and all participants were assured of the confidentiality of their responses. The letters of introduction as well as the questionnaires underlined privacy aspects, and stated that no information about participants' responses would be passed on to teachers or parents.

Parents were participating under the same confidentiality conditions as the adolescents. There were 1,077 (84% of 1,279) parents who completed the instruments in the first round. Of these parent questionnaires, 72.9% were complete by mothers, 18.2% by fathers, 6.9% by both parents, and 0.9% by someone other than the parents (i.e., stepparent, guardian). In the follow-up in Spring 2000, 886 (69.3% of 1,279) parent questionnaires were returned. Of these, 66.8% were completed by mothers, 14.7% by fathers, 16.8% by both parents, and 0.1% by someone other than the parents. At Time 1, 71.8% of the adolescents were living in intact, nondivorced families. At Time 2, that figure had decreased slightly to 71.1%. Most of the adolescents (86.6%) were born in Sweden by Swedish mothers (78.8%) and fathers (79.0%). Only 6.9% of the mothers and 6.1% of the fathers were unemployed, while 41.2% and 33.1% of mothers and fathers, respectively, had attained a university degree. From a total of 676 adolescent–parent pairs, we had complete data at both waves.

Measures

In most studies on adolescent smoking, adolescents themselves are asked to report on their own smoking behavior, as well as on their perception of parental control (Conrad, Flay, & Hill, 1992; Ennett et al., 2001). Only a few prospective studies have included both parents and adolescents. One of the advantages of including different family members is that one can prevent statistically significant associations between predictor variables and outcome variables occurring as a result of the same measurement source (as might be the case in studies with only one source; also called the *shared rater bias*). In the current research, we decided to use parental reports on all parental control measures (independent variable) and adolescent reports on their own smoking behavior (dependent variable).

Swedish Sample

Child disclosure. To assess child disclosure, an instrument consisting of five items was developed (for details, see Kerr & Stattin, 2000). Sample items are "Do you hide a lot from your parents about what you do during nights and

weekends?" and "If you are out at night, when you get home, do you tell what you have done that evening?" Responses were reported on a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*). Internal consistency was .80.

Parental behavioral control. A five-item scale was employed to assess parental behavioral control (Kerr & Stattin, 2000). Sample items are "Does your child need your permission to stay out on a weekday evening?" and "Do you always require that your child tells you where he or she is at night, whom he or she is with, and what he or she does with her/his friends?" Responses were given on a 5-point scale ranging from 1 (*No, never*) to 5 (*Yes, always*). Alpha was .75 (.70 in the Dutch data).

Parental solicitation. Parental solicitation was assessed with five items (e.g., "In the last month, have you talked with the parents of your child's friends?" and "How often do you initiate a conversation with your child about things that happened during a normal day at school?"; Kerr & Stattin, 2000). Alpha was .69 (.77 in the Dutch data).

Adolescent smoking behavior. At both waves, identical items were used to assess smoking behavior. Adolescents were asked to report whether or not they currently smoked. Responses were as follows: 1 = *do not smoke now—have never smoked regularly*; 2 = *do not smoke now—have smoked regularly earlier*; 3 = *smoke now, started regularly this year*; or 4 = *smoke now, have smoked regularly more than 1 year.* For the purpose of this paper, we dichotomized the answers into 1 (*currently not a regular smoker*) and 2 (*currently a regular smoker*).

Strategy for Analyses

First, we computed descriptive analyses to gain insight into the prevalence of smoking at both waves and the prevalence of smoking onset between the waves. Analyses were conducted for the total samples, and for boys and girls separately. Second, we conducted logistic regression analyses in which we examined the associations between parental control, parental solicitation, child disclosure, and smoking onset.

Results

In this study, 87.8% of respondents reported being nonsmokers at the first wave. An additional 6.8% reported being nonsmokers but indicated having smoked in the past (i.e., *quitters*). Of the respondents, 5.0% reported being regular smokers at the first wave. At the second wave, 79.8% indicated being nonsmokers, 7.8% were quitters, and 13.2% were regular smokers. No gender differences were found.

Logistic regression analyses were conducted on associations between parental control, parental solicitation, and child disclosure and adolescent smoking

Table 1

Multivariate Regression Analyses Predicting Smoking Onset by Parenting Measures and Child Disclosure: Swedish Data

	Total sample ($n = 655$)		Boys ($n = 300$)		Girls ($n = 355$)	
	OR	CI	OR	CI	OR	CI
Behavioral control	0.92	0.67-1.27	0.76	0.49-1.18	1.07	0.66-1.74
Solicitation	1.19	0.85-1.66	1.21	0.74-1.99	1.18	0.75-1.86
Child disclosure	0.33***	0.24-0.45	0.38***	0.23-0.62	0.27***	0.18-0.42

Note. Standardized parameters of the equation. OR = odds ratio, CI = 95% confidence interval.
***$p < .001$.

onset at Wave 2. Analyses were computed for the total sample and separately for boys and girls (Table 1).

Child disclosure was related moderately to smoking onset, implying that adolescents who disclose information to their parents were less likely to start smoking. Parental control and solicitation, however, were not significantly related to the onset of regular smoking at Wave 2. Separate analyses showed no differences between the relationships between the model variables and smoking onset between boys and girls.

Study 2

Method

Procedure and Sample Characteristics

Data for analyses were derived from a large-scale survey among 1,357 adolescents (11 to 14 years old) carried out in Fall 2000 in The Netherlands. A total of 11 schools were selected. All students in the first grade of secondary education of these schools were included, with a total of 45 classes. Before the questionnaires were administered, parents were informed about the aims of the study and could return a form stating that they did not want their child to participate (although some parents called the institute for additional information, none of the parents returned this form). The questionnaires were completed in the classrooms

in the presence of a teacher. No explicit refusals were recorded; nonresponse was exclusively a result of the adolescent's absence on the day of assessment.

In addition, questionnaires were sent to parents in Fall 2000. Parents were asked to return the completed questionnaire by mail, and 718 parents actually returned the form. We explicitly instructed parents to have only one parent complete the form. In 75% of the cases, the mother completed the questionnaire; and in 25% of the cases, the father completed it.

The second wave of the study was conducted in Spring 2001, which was 6 months after the first wave. Questionnaires were administered among adolescents following similar procedures as in the first wave. A total of 1,215 (89.5% response rate) adolescents participated in the second wave.

Attention was drawn to the confidentiality of responses (Botvin & Botvin, 1992). The letters of introduction and the questionnaires emphasized privacy aspects and stated clearly that no information about specific participant responses would be passed on to teachers or parents. Only the principal researcher did matching of numbers and names. In order to motivate respondents to participate, adolescents and parents were included in a lottery in which CD certificates could be won. In addition, parents could request a summary of the outcomes of our study.

Analyses are restricted to those parent–adolescent dyads for which we have complete data sets. We have completed data at both waves for a total of 586 adolescent–parent pairs. In total, 310 (52.9%) boys and 276 (47.1%) girls participated in this study. The mean age of respondents was 12.30 years ($SD = 0.51$). The majority of adolescents (92.2%) were born in The Netherlands.

Measures

The assessments of parental control and parental solicitation were identical to those employed in the Swedish study (Study 1). We translated the scales of Kerr and Stattin (2000) into Dutch.

Adolescent concealment from parents. To assess concealment from parents, we adapted Larson and Chastain's (1990) Self-Concealment scale (SCS). The original SCS consists of 10 items assessing (a) the tendency to keep things to oneself; (b) the possession of secret or negative thoughts not shared with others; and (c) the apprehension of the revelation of concealed personal information.

To assess concealment from parents, we adapted the original items simply by adding parents as the target of adolescents' concealment (Finkenauer, Engels, & Meeus, 2002). For example, the items "I have an important secret that I haven't shared with anybody" and "I have a secret that is so private I would lie if anybody asked me about it" were changed to "I have an important secret that I haven't shared with my parents" and "I have a secret that is so private I would lie if my parents asked me about it," respectively. Adolescents rated all items on

5-point scales ranging from 1 (*not at all*) to 5 (*extremely*). In our study, the scale had high internal consistency (Cronbach's $\alpha = .86$). Adolescents' ratings were averaged to establish a score for concealment from parents. Higher values indicated greater concealment.

Psychological control. A subscale of the parenting style index of Steinberg and colleagues (Lamborn, Mounts, Steinberg, & Dornbusch, 1991; see also Gray & Steinberg, 1999) was employed to assess psychological control. We used a Dutch translation of the index (Beyers & Goossens, 1999) in the current study. This scale assesses the extent to which parents exert coercive, nondemocratic discipline and discourage children from expressing individuality in the family. This scale consists of eight items with a Cronbach's alpha of .72.

Smoking-specific parental control. The psychometric properties of the assessments of smoking-specific parenting were examined in a pilot study among 116 families in which questionnaires were administered to the father, mother, and adolescent (for details, see Engels & Willemsen, 2004). *House rules* assess the existence of rules on adolescent and adult smoking at home (six items). Sample items are "My child is allowed to smoke at home" and "It is a rule that someone who wants to smoke, smokes outside home." Responses were rated on a 5-point scale ranging from 1 (*definitely not*) to 5 (*definitely yes*), with an alpha of .84.

Asking about the frequency of parent-initiated talks and discussions about smoking at home assessed *smoking-related solicitation.* The scale consists of six items. Sample items are "How often do you talk about smoking with your child?" and "How often do your talk about at what age your child may smoke?" Responses were rated on a 5-point scale ranging from 1 (*never*) to 5 (*at least once a week*). Cronbach's alpha was .84.

Parental warnings aimed to measure how often parents make explicit warnings about the dangers and disadvantages of adolescent smoking. The scale consists of seven statements, such as "It is very hard to quit once you started smoking" and "Smoking does not make you popular among friends." Responses were rated on a 5-point scale ranging from 1 (*never*) to 5 (*very often*). Internal consistency was .86.

Three items assessed the *availability of cigarettes at home.* Sample items are "Do you have cigarettes freely available at home?" and "Do you hide cigarettes?" Responses were rated on a 4-point scale ranging from 1 (*never*) to 4 (*always*). Internal consistency was .79.

Smoking-specific psychological control was assessed by transforming Steinberg and colleagues' (Steinberg, Lamborn, Dornbusch, & Darling, 1992) original scale into the context of smoking. This resulted in a seven-item scale with responses ranging from 1 (*never*) to 5 (*very often*). Alpha was .77.

Adolescent smoking behavior. A widely employed method to assess smoking behavior was used (De Vries, Engels, Kremers, Wetzels, & Mudde, 2003; Kremers, Mudde, & De Vries, 2001). Respondents were asked to rate which

stage of smoking applies to them on a 7-point scale. Responses ranged from 1 (*I have never smoked, not even one puff*) to 7 (*I smoke at least once a day*). For the purpose of this paper, we dichotomized responses into 1 (*never smoked*) and 2 (*experimented with smoking*).

Quality of parent–child relationship. To examine the quality of the parent–adolescent relationship as a moderator for the effects of parental control on adolescent smoking behavior, the "Parent" part of the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) was used to measure the quality of the relationship between adolescents and parents. The scale consists of 12 items, and adolescents must complete these items separately for their mother and their father. Responses were rated on a 4-point scale ranging from 1 (*never*) to 4 (*almost always*). Alphas were .83 and .87 for mother and father, respectively. Past research on the psychometric properties has shown high internal consistency (e.g., Armsden & Greenberg, 1987; Nada Raja, McGee, & Stanton, 1992). Furthermore, high 3-week test–retest reliability has been reported, and the scale appears to possess convergent validity (Armsden & Greenberg, 1987).

Smoking behavior of parents. Adolescent reports of parental smoking were used. Adolescents were asked to report whether or not their father and their mother are currently smokers. Previous studies have shown that adolescents are capable of providing accurate information on their parents' smoking status (Engels & Willemsen, 2004). These responses were used to construct a variable with the anchors 1 (*both parents are nonsmokers*) and 2 (*one or both parents are smokers*).

Parental confidence. At Wave 1, we included five items on parents' own perceptions of the impact they have on their offspring's smoking behavior. This scale includes items such as "Do you think you are able to prevent your child from smoking?" and "Do you think that the precautions you take to prevent your child from smoking have an effect on your child?" ($\alpha = .69$). This scale provides an indication of parents' own confidence in the control of their child's smoking behavior.

Strategy for Analyses

After conducting descriptive analyses on the prevalence of smoking, we selected the group of never smokers at Time 1. This implies that the outcome variable for the Dutch sample is different than for the Swedish sample. We focus on the onset of regular smoking in the Swedish sample, and on the onset of smoking in the Dutch sample. Because the Dutch sample consists of early adolescents among whom only a small percentage are regular smokers, concentrating on the prediction of the onset of regular smoking is not possible because of small power problems.

First, we ran analyses concerning the effects of parental control, psychological control, solicitation, and adolescent openness on adolescent smoking onset, as

we did in Study 1. Further, we examined the relations between smoking-specific parental control, child concealment, parental smoking, and quality of parent–child relationship and smoking onset by means of logistic regression analyses. We examined whether the impact of indicators of parental control on smoking onset varies with different levels of parental smoking status and quality of parent–child relationship by means of interaction terms in logistic regression analyses. Finally, we looked at whether parents have an illusion of control by looking at the associations between their own ideas about the effectiveness of their actions, parental actions, and the actual effectiveness of these actions.

Results

A total of 75% of the respondents reported being nonsmokers at Wave 1. An additional 15% reported being nonsmokers, but indicated having smoked in the past (i.e., quitters). At Wave 1, 6% of the respondents reported being occasional smokers and 4% reported being regular smokers. At the second wave, 70% indicated being nonsmokers, 16% were quitters, 6% were occasional smokers, and 9% were regular smokers. Furthermore, in the 6-month interval between the two waves, it appears that of the initial 440 never smokers at Time 1 (T1), 13% reported having smoked at Time 2 (T2). Although cross-tabulations show that there were more boys (29%) than girls (21%) who indicated having smoked or being a current smoker at T1 ($p < .05$), there were no significant gender differences in smoking at T2. In addition, the percentage of T1 nonsmoking adolescents who reported having started to smoke at T2 was similar for boys and girls.

We examined the univariate correlations between parental behavioral control and solicitation on the one hand, and psychological control on the other hand. It appears that behavioral control and psychological control were not significantly related ($r = .04$, *ns*) and that solicitation and psychological control were negatively related ($r = -.21$, $p < .001$) to smoking onset. The latter correlation implies that higher levels of solicitation were related to lower levels of parental psychological control. Table 2 shows the outcomes of the logistic regression analyses in which parental behavioral control, solicitation, psychological control, and child concealment were included as predictor variables for smoking onset. The analyses for the total sample analyses show no significant associations between psychological control, solicitation, behavioral control, and smoking onset. Child concealment was indeed related to smoking onset, especially for girls.

Logistic regression analyses were carried out to examine the multivariate relationships between smoking-specific indicators of control and monitoring, parental smoking and quality of parent–child relationship, and adolescent smoking onset. Table 3 shows no significant effects of the indicators of smoking-specific parenting on smoking onset. Separate analyses for boys and girls show that only parental smoking-related solicitation was related to smoking onset for

Table 2

Multivariate Regression Analyses Predicting Smoking Onset by Parenting Measures and Child Disclosure: Dutch Data

	Total sample ($n = 439$)		Boys ($n = 219$)		Girls ($n = 220$)	
	OR	CI	OR	CI	OR	CI
Behavioral control	0.65	0.24-1.80	1.09	0.19-6.17	0.46	0.13-1.61
Psychological control	1.15	0.54-2.44	2.01	0.76-6.08	0.67	0.21-2.14
Solicitation	0.91	0.48-1.74	1.06	0.40-2.81	0.85	0.35-2.04
Child concealment	1.97**	1.27-3.04	1.20	0.64-2.16	3.63***	1.82-7.25

Note. Standardized parameters of the equation. OR = odds ratio, CI = 95% confidence interval.
**$p < .01$. ***$p < .001$.

boys. Parents who talk frequently with their children about issues related to smoking were more likely to have children (i.e., boys) who refrained from smoking at Wave 2. Further, although parental smoking was cross-sectionally related to adolescent smoking behavior, it did not predict the onset of smoking. The quality of parent–child relationships was not associated with smoking onset.

In further analyses, we looked at possible interaction effects between parental smoking and anti-smoking socialization. Main effects were included in the first step, and interaction terms (e.g., Parental Smoking × Parental Behavioral Control) were included in the second step of the equation. In none of the analyses were interaction terms significant, indicating that the smoking status of the parents did not affect the impact of their general or smoking-specific control on their children's smoking onset.

Analyses were conducted to verify whether the associations between general and smoking-specific parenting and smoking onset varied as a function of the quality of the parent–child relationship. We then repeated the logistic regression analyses within inclusion of interaction terms. However, no differences were found to indicate that the quality of the parent–child relationship affected the impact of general and smoking-specific parental control on smoking onset.

One might question whether nonsignificant findings are affected by high intercorrelations between the predictor variables. Pearson correlations between antismoking socialization indicators ranged from .01 (*ns*) to .31 ($p < .001$),

Table 3

Multivariate Regression Analyses Predicting Smoking Onset by Smoking-Specific Parental Control: Dutch Data

	Total sample ($N = 439$)		Boys ($n = 219$)		Girls ($n = 220$)	
	OR	CI	OR	CI	OR	CI
Warnings	1.51	0.99-2.97	1.70	0.92-3.16	1.52	0.82-2.83
Rules	1.16	0.80-1.68	0.89	0.52-1.52	1.45	0.82-2.55
Solicitation	0.50*	0.27-0.93	0.28*	0.09-0.81	0.89	0.34-2.34
Psychological control	0.86	0.47-1.56	0.89	0.34-2.31	0.76	0.32-1.78
Availability	1.06	0.52-2.14	1.50	9.54-4.14	0.54	0.16-1.81
Child concealment	1.83*	1.05-3.19	1.69	0.77-3.72	2.26	0.90-5.67
Parental smoking	2.14	0.80-5.74	1.20	0.24-5.96	3.66	0.87-15.45
Parent–child relationship	0.74	0.40-1.35	1.56	0.58-4.20	0.44	0.18-1.09

Note. Standardized parameters of the equation. OR = odds ratio, CI = 95% confidence interval.
*$p < .05$.

indicating that eventual problems with multicollinearity did not occur. Parental smoking was associated with availability of cigarettes at home ($r = .59, p < .001$), and quality of parent–child relationship was associated with child concealment ($r = .58, p < .001$). We checked whether these interrelations affected the general findings in additional analyses (e.g., analyses in which we looked at separate effects of parental smoking and availability of cigarettes). This was not the case for parental smoking, but indeed for the effects of child concealment and quality of the parent–child relationship. If child concealment was omitted as a predictor variable, higher quality of the parent–child relationship was associated with less likelihood that the children would start to smoke (odds ratio [OR] = 0.52, $p < .001$, 95% confidence interval [CI] = 0.33 to 0.81; boys, OR = 1.07, *ns*, 95% CI = 0.51 to 2.25; girls, OR = 0.26, $p < .001$, 95% CI = 0.13 to 0.52).

The presented findings suggest that parental control and solicitation are not related to adolescents' smoking onset. In other words, for parents who report high levels of general or smoking-specific parental control, their effort has not paid off in terms of a lower likelihood of child smoking. This might imply that

parents, especially those exerting control on their children, have an illusion of control: They think they have control, but they actually do not.

We tested whether parents do indeed have an illusion of control by looking at the effect of this concept (i.e., confidence in control) on adolescents' smoking onset. It appears that differences in parental confidence in their control of their child's smoking behavior were not associated significantly with smoking onset. Yet, the responses on parental confidence indeed were related significantly to indicators of smoking-specific parental control, such as rules ($r = .24$, $p < .001$), warnings ($r = .11$, $p < .01$), availability ($r = -.24$, $p < .001$), and psychological control ($r = .24$, $p < .001$). This suggests that parents with high levels of confidence in their ability to control and affect their offspring's smoking behavior also were more involved in actual controlling behavior (and vice versa). Unfortunately, however, their actions did not seem affect their children's smoking behavior. To explore the extent to which children may be responsible for this parental illusion of control, we checked whether child concealment was related to parental confidence. This appears to have been the case. Adolescents who concealed information from their parents were less likely to have parents who had confidence in affecting their child's smoking behavior ($r = -.19$, $p < .001$). This suggests that adolescents may be responsible, in part, for their parents' overconfidence in their control.

General Discussion

The present studies concentrated on the role of parental control in the onset of smoking behavior in adolescents. Data from two longitudinal studies, conducted in Sweden and The Netherlands, were used to address the role of parental control in adolescent smoking onset. In general, only low to nonsignificant relations were found between several assessments of parental control and smoking onset. According to the data from these two empirical studies, the control parents exert in the way they raise their children, and more specifically in the way they deal with adolescent smoking, is not effective in preventing their offspring from smoking.

Most studies have shown nonsignificant or negative relations between parental control and adolescent smoking behavior, implying that general behavioral control has a preventive effect on smoking (e.g., Chassin et al., 1998; Cohen, Richardson, & LaBree, 1994; Kandel & Wu, 1995). Parents who control their children's behavior by actively seeking information about the whereabouts of their children and by being strict about what children can and cannot do may be successful in prohibiting their children from adopting problem behaviors such as smoking. Nevertheless, our results do not provide evidence for a relationship between parental control and smoking. This may be because we focused on actual parental actions and activities to control their children and not on their knowledge

about their children's activities. In order to be sure that significant relations between parental control and smoking are not affected by adolescents' own openness about their activities, we included measures of adolescent disclosure in the analyses. Although this may have suppressed the paths between parental control and smoking, the advantage of this approach is that we know that these paths are not influenced by adolescents' own actions (Kerr & Stattin, 2000).

In the Dutch data, we examined whether assessments of smoking-specific parental control were related to smoking onset. Again, no associations between these indicators of parental control (e.g., having house rules on smoking, warnings about the consequences of smoking) and solicitation and smoking onset were found. This implies that in concordance with the findings for general parental control, parental efforts to control their offspring's smoking behavior do not seem to be successful. These findings are in line with a study by Ennett et al. (2001), who did not find an effect of parental solicitation on smoking and drinking behavior, but are in contrast with the studies of Engels and Willemsen (2004), Jackson and Henriksen (1998), Andrews et al. (1993), and Simons-Morton et al. (1999), who found small to moderate associations between various indicators of parental control and adolescent smoking.

There are several explanations for these differences in findings. First, the analytical strategy we employed is rather stringent because we examined the longitudinal relations of parental control and smoking onset (Ennett et al., 2001). A focus on smoking onset implies that we only included a subset of respondents—namely, those who did not smoke at the first wave—and therefore restricted variation on the independent measures. This may lead to lower associations between independent and dependent measures (Engels, Knibbe, & Drop, 1999). Second, most of the studies on smoking-specific parenting employed a cross-sectional design, which may account for the higher associations between parenting and adolescent smoking in these studies (Andrews et al., 1993; Engels & Willemsen, 2004; Jackson & Henriksen, 1997; Simons-Morton et al., 1999). Future longitudinal studies should replicate the nonsignificant results of the present research.

A third explanation for the difference between existing findings and our findings is that we aimed to avoid shared rater bias by using parental reports on parental control and adolescents' reports on their own smoking behavior. Significant associations between parental reports and adolescent outcome parameters cannot be attributed to the fact that a single person has completed all of the scales. Still, some authors stress the importance of subjective experience. It has been argued that children's perceptions of their parents' behavior have more of an influence on their development than does parents' actual behavior (Bronfenbrenner, 1979; Steinberg et al., 1992). Indeed, studies that examined the relations between childrearing and adolescent outcomes from parental and adolescent perspectives generally found that adolescents' rather than parents' perceptions of parental behavior are associated with adolescent adjustment (Gecas &

Schwalbe, 1986). The most psychologically consequential reality for adolescents may be the version they construct for themselves (Engels, Finkenauer, Meeus, & Dekovi, 2001). Yet, when testing this suggestion, the results in our study remained nonsignificant, indicating that, at least in the Swedish data set, adolescents' perceptions of their parents' control were as unrelated to their smoking behavior as parents' self-reports.

Still, information from parents is not only necessary to validate the findings of adolescents' self-reports, but also is extremely helpful in directing the practical implications. For example, it is possible that an individual adolescent with behavioral problems thinks that he or she does not have a supportive and safe relationship with his or her parents. However, the strategy that should be followed in counseling and how his or her parents could be involved depends on the validity of the thoughts of this adolescent. For example, it is possible that parents actually provide support, but that the adolescent does not perceive these parental actions as being supportive. In order to obtain more information about the validity of parental and adolescent reports on parenting in general, and parental control more specifically, it is important to compare these kinds of data with the findings of observational studies in which trained experts rate parent–adolescent interactions.

Further insight into the lack of direct associations between parental control and adolescent smoking onset was gained by looking at parental own confidence concerning their efforts to prevent their children from smoking. Clearly, our findings show that parents who think they can make a difference in preventing their children from experimenting with smoking are also those parents who are more involved in controlling behaviors, such as having house rules, talking about smoking, and warning their children about the negative effects of smoking. However, their efforts seem to be in vain. In addition, the fact that this parental confidence correlated with adolescents' concealment from parents gives rise to the following question: Who is actually in control—parents or adolescents?

This issue was addressed recently by Kerr and Stattin (Kerr & Stattin, 2000; Stattin & Kerr, 2000), who demonstrated that parental knowledge about their children's activities is hardly affected by what kind of actions parents undertake, but rather by what children disclose to their parents. However, the findings on the effect of the quality of the parent–child relationship on smoking onset and the strong association between child concealment and the quality of the parent–child relationship suggest that the extent to which children disclose is affected by the trust they have in their parents and the ways parents communicate with their children. So, it would be incorrect to interpret the effect of child communication on smoking onset to children's actions only.

Henriksen and Jackson (1998) postulated that parents might be more effective in preventing their children from smoking when they do not smoke themselves because when they do smoke, parents could be sending a mixed message to their

children regarding the pros and cons of smoking. In their study, Henriksen and Jackson showed that although both nonsmoking and smoking parents use antismoking strategies to prevent adolescents from smoking, nonsmoking parents are more successful in actually doing so.

In the Dutch study, we systematically checked whether this mechanism is operating. This was not the case. It should be said that Henriksen and Jackson used cross-sectional data from one source (i.e., they only concentrated on adolescents as a source of information) and did not employ interaction terms in logistic regression analyses to test moderator effects of parental smoking behavior more rigorously. These factors may account for differences in findings. Furthermore, it was also tested whether the quality of the parent–child relationship moderates the association between parental control and smoking behavior (Foshee & Bauman, 1992). In accordance with Ennett et al.'s (2001) prospective study on parental solicitation and smoking and drinking behavior, we did not find a moderator effect of relationship quality. Although other factors may function as moderators—such as peer smoking (Foshee & Bauman, 1992), sibling smoking (De Vries, Backbier, Kok, & Dijkstra, 1995), or parental attitudes on drug use (Bogenschneider, Wu, Raffaelli, & Tsay, 1998)—it is interesting to see that parental smoking and the quality of the parent–child relationship do not affect the associations between parental control and smoking onset.

In contrast to The Netherlands, the prevalence of smoking in adolescence has decreased in recent years in Sweden (Trimbos-Instituut, 2002). Although these figures can be attributed to various causes (e.g., differences in governmental policies on tobacco advertisement, the level of health education in both countries), they also may be caused by differences in attitudes and norms within these societies. Nonetheless, these differences were not reflected in our findings. Our findings did not vary across the two countries. The main findings on parental control and adolescent smoking did not vary much between both countries.

On the basis of our findings, one cannot be very optimistic about the opportunities parents have to control their offspring's smoking behavior. Still, it should be said that we do not suggest that the socialization of parents does not affect adolescents' smoking onset at all. Negative results, such as the ones found in the present research, always represent a particular challenge for (future) research because they give rise to a large variety of explanations. For instance, the modeling effects of parental own smoking appear to be moderately to strongly related to smoking onset among adolescents in several longitudinal studies (see reviews by Conrad et al., 1992; Petraitis, Flay, & Miller, 1995). In addition, other aspects of parenting (e.g., support, trust) may be related to smoking (Chassin et al., 1998). Another noteworthy issue in our research is that the age groups we focused on in our studies (i.e., 12- to 14-year-olds) may explain part of the nonsignificant effects of parental control. Reviews of the literature on the parent–child relationship (Arnett, 1999; Finkenauer, Engels, Meeus, &

Oosterwegel, 2002) showed that the most conflicts and problems in the relationship between parents and children appear in the early adolescent years, when adolescents undergo several personal and social transitions. It is possible that particularly in these years the explicit activities of parents to control their offspring's behavior are not successful and may even have counterproductive effects (see discussion in Chassin et al., 1986). Therefore, it is important to examine whether similar mechanisms appear to exist in middle and late adolescents.

Another possibility is that the effects of parental control on adolescent smoking are not direct, but indirect through adolescents' selection of friends (Brown, Mounts, Lamborn, & Steinberg, 1993; Engels, Knibbe, De Vries, et al., 1999). Several studies have shown that adolescents who smoke are associated with peers who also smoke (e.g., Bauman & Ennett, 1996). Although this homogeneity of smoking in friendships may be the result of peer pressure, it also may be the result of a peer-selection process: Smokers decide to become friends with peers who smoke, and not those who do not smoke (Bauman & Ennett, 1996; Engels, Knibbe, Drop, & De Haan, 1997). This kind of selection process appears to be rather apparent in adolescent relationships, and some studies have shown that parents affect this selection process (Engels, Knibbe, De Vries, et al., 1999). For example, parents may function as gatekeepers in not allowing their children to associate with specific peers. Thus, it is important to examine in future studies the effects of parental control on the selections adolescents make in their contacts with peers in order to gain insight into the possible indirect influence of parental control on adolescent smoking behavior.

Still, it should be stressed that our findings differ from other studies on parental control (e.g., Chassin et al., 1986, 1998; Simons-Morton et al., 1999) and smoking-specific control (e.g., Jackson & Henriksen, 1997). Most of these studies have been carried out in the United States. Before we attribute differences in findings to cultural differences, it might be the case that methodological reasons explain these differences. For instance, hardly any of these studies included both parents and adolescents in their design in order to avoid shared rater bias. Nonetheless, if we would find similar findings in future research if only adolescent reports were used, then differences in findings might be explained by cultural differences. For instance, despite legislation, in Sweden and The Netherlands it is relatively easy for underage children to buy cigarettes. In addition, the social norms on smoking are more liberal in Europe, as compared to the United States. This might lead to parents putting more effort toward preventing children from smoking and children perhaps being more susceptible to parental rules and communication not to smoke. Cross-sectional research is warranted to test these assumptions.

Our research suffers from some limitations. First, the interval between the waves varied between the two studies: 6 months in the Dutch study, and 18 months in the Swedish study. With respect to the Dutch study, an interval of

6 months may be too small to examine the effects of smoking onset. However, 13% of the nonsmokers at the first wave indicated having started smoking at the second wave, which provides sufficient power for analyses. Despite the difference in intervals between the waves, the results in both studies are similar, which seems to suggest that the time interval did not play an important role in the pattern of results found in the studies.

Second, it was not possible to compare the findings on both studies on smoking-specific parenting because the Swedish study did not include these assessments. Third, it is important to stress that our paper focused on the impact of parental control on the early stages of smoking. In future studies, it will be essential to look at the impact of parenting on the maintenance and cessation of smoking. Further research is also required to examine whether our findings will hold across different samples in terms of age and educational level. In addition, our sample did not include extreme groups since we conducted research at ordinary secondary schools. For example, the variation of responses on parental control was rather limited, suggesting that only a few parents reported that they hardly provide control. The effects of extreme high or low levels of parental control on adolescent behavior could not be examined.

Despite these shortcomings, this paper has demonstrated with two longitudinal studies (using large samples of both adolescents and parents) that parental control is minimally related to the onset of smoking in adolescents. Additionally, the inclusion of indicators of general parental control or smoking-specific parental control or the inclusion of moderator variables in analyses did not result in different findings. Furthermore, parents seem to have an illusion of control. When asked, they indicate having some influence by their own actions on their offspring's smoking behavior. However, while this confidence of parents is reflected in their own actions (i.e., enforcing more control), these actions do not seem to affect whether their child starts to smoke.

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